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Cont.

- (d) a power supply;
 - (e) a payload interface; and
 - (f) at least one actuator.
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REMARKS

Reconsideration of the above-identified patent application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-55 are in this case. Claims 18, 27, 45 and 52 have been rejected under § 112, second paragraph. Claims 1-3, 5-10, 12-17, 19-22, 28, 31, 35-40, 42-44, 46 and 47 have been rejected under § 102(b). Claims 11, 18, 23-26, 29, 30, 32-34, 41 and 48-51 have been objected to. Claims 53-55 have been allowed. Dependent claims 18, 27, 45 and 52 have been amended. New independent claim 59 and new dependent claims 56-58 have been added.

The claims before the Examiner are directed toward a local area network based on serial intelligent cells (SICs) that are connected in a pairwise manner only by electrically-conducting media to form communicating pairs. The two SICs of each pair communicate with each other, bidirectionally and independent of any other pair, exclusively via the respective electrically-conducting media. In various embodiments, the electrically-conducting media include electrical power wiring or telephone wiring of a building; at least one of the media is used for both data exchange and either electrical power delivery, analog telephony or digital telephony; at least one of the SICs is powered from an electrical power main, from a dedicated power line, or from the electrically-conducting media of its respective pair, or can itself deliver electrical power; or at least one of the pairs is partly housed within an electrical outlet. In other

embodiments, one of the SICs includes a sensor or an actuator; one of the SICs is connected to a public telephone network interface; or the local area network functions as a multiplexer.

§ 112, Second Paragraph Rejections

The Examiner has rejected claims 18, 27, 45 and 52 under § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the Examiner has pointed out that claims 18 and 45 recite the limitation “a method selected from the group”, that claims 27 and 52 recite the limitation “one device selected from the group”, and that there is insufficient antecedent basis for these limitations.

The Examiner’s rejection is respectfully traversed. The language which the Examiner finds objectionable is standard Markush group language.

Nevertheless, in order to expedite the prosecution, Applicant has chosen to eliminate this Markush group language by splitting the claims in question in two. Specifically: claim 18 has been split into claims 18 and 56, claim 27 has been split into claims 27 and 57, claim 45 has been split into claims 45 and 58, and claim 52 has been split into claims 52 and 59. From among the manual and automatic assignments of the address formerly recited by claims 18 and 45, these claims now recite only manual assignment of the address. From among the at least one sensor and actuator formerly recited by claims 27 and 52, these claims now recite only at least one sensor. New claims 56 and 57 recite automatic assignment of the address. New claims 58 and 59 recite at least one actuator.

The support in the specification for the amendments to claims 18, 27, 45 and 52 lies in these claims as filed. The support in the specification for new claims 56-59 lies in claims 18, 27, 45 and 52, respectively, as filed.

§ 102(b) Rejections - Markkula, Jr., et al. '690

The Examiner has rejected claims 1-3, 5-10, 12-17, 19-22, 28, 31, 35-40, 42-44, 46 and 47 under § 102(b) as being anticipated by Markkula, Jr., et al., U. S. Patent No. 4,918,690 (henceforth, "Markkula, Jr., et al. '690"). The Examiner's rejection is respectfully traversed.

Markkula, Jr., et al. '690 teach a network of intelligent cells that communicate with each other via "countless media" (column 4 line 47), including, *inter alia*, "...power lines, twisted pair..." (column 1 lines 45-46). The present invention also is a network of serial intelligent cells connected by electrically-conducting media, including power lines and twisted pairs. Nevertheless, independent claims 1, 35, 36, 38-40, 42-44, 46 and 47 all teach limitations that are not taught by Markkula, Jr., et al. '690 and that are neither hinted nor suggested by Markkula, Jr., et al. '690.

Most importantly, Markkula, Jr., et al. '690 fail to teach the limitation of part (a) of the rejected independent claims, that

each of said electrically-conducting media interconnects no more than two of said serial intelligent cells (emphasis added)

Indeed, Figure 4 of Markkula, Jr., et al. '690 shows five cells all connected to each other by the same twisted pair **50**, five other cells all connected to each other by the same twisted pair **51**, and four more cells all connected to each other by the same twisted pair **52**. It is true that Markkula, Jr., et al. also illustrate cases of electrically-conducting media that connect only two cells, with twisted pair **72** of Figure 4, that

connects only cells **56** and **57**, being a case in point. Nevertheless, there is neither a hint nor a suggestion anywhere in Markkula, Jr., et al. '69 that this is a necessary limitation. By contrast, this limitation, that each electrically conducting medium connect at most two cells, is a necessary limitation of the present invention that is recited explicitly in part (a) of all of the rejected independent claims. Thus, far from being anticipated by Markkula, Jr., et al. '690, the present invention is not even obvious from Markkula, Jr., '690.

Although the limitation of part (a) of the rejected independent claims suffices to make the present invention patentably distinct from the teachings of Markkula, Jr., et al. '690, Applicant respectfully points out other limitations of these claims that also are neither hinted nor suggested in Markkula, Jr., et al. '690, and so also serve to make the present invention, as recited in the rejected independent claims, patentable over Markkula, Jr., et al. '690.

The rejected independent claims all define the network of the present invention as consisting of "at least one communicating pair". By contrast, the network of Markkula, Jr., et al. '690 consists of groups of cells that may be of arbitrary size, including, but not necessarily limited to, two cells per group. All that is necessary is that the cells "work together for a common function" (column 5 lines 59-60). So, for example, group 37 of Figure 2 includes four cells, group 38 of Figure 2 also includes four cells, group 55 of Figure 4 includes two cells, group 75 of Figure 4 includes two cells, and the group of Figure 5 includes three cells. There is neither a hint nor a suggestion anywhere in Markkula, Jr., et al. '690 of any utility whatsoever to limiting group membership to only two cells.

Part (d) of the rejected independent claims requires that

each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair (emphasis added)

The mere fact that Markkula, Jr., et al. '690 discuss, in column 68 line 8 through column 71 line 41, protocols for dealing with contentions and collisions, indicates that the cells of Markkula, Jr., et al. '690 can not be guaranteed to always communicate independently of each other. Indeed, it is well known in the art that contentions and collisions are inherent to bus topologies such as that used by Markkula, Jr., et al. '690. By contrast, the point-to-point topology of the present invention completely precludes such interference among communicating cells. The protocols of Markkula, Jr., et al. '690 are software solutions of the contention/collision problem. There is neither a hint nor a suggestion anywhere in Markkula, Jr., et al. '690 of a hardware solution to this problem, as taught in the present invention and as recited in the rejected independent claims.

Furthermore, the bus topology employed by Markkula, Jr., et al. '690 is incapable of supporting bidirectional communication. "Bidirectional communication" is defined in the specification, on page 7 lines 23-24, as being equivalent to "full duplex" communication. It is well known that bus topology allows only one cell at a time to transmit. Therefore, the network of Markkula, Jr., et al. supports, at best, only "half duplex" communication in which the cells take turns being "announcers" and "listeners".

In short, the rejected independent claims are in fact allowable over Markkula, Jr., et al. '690 in their present form.

With independent claims 1 and 36 allowable in its present form, it follows that claims 2, 3, 5-10, 12-17, 19-22, 28, 31 and 37, which depend therefrom, also are allowable in their present form.

Objections

The Examiner has objected to claims 11, 18, 23-26, 29, 30, 32-34, 41 and 48-51 as being based on rejected base claims. The Examiner has noted that claims 11, 18, 23-26, 29, 30, 32-34, 41 and 48-51 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

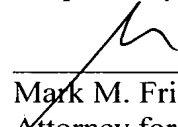
In view of the discussion above in the context of the § 102(b) rejections, Applicant submits that the base claims from which claims 11, 18, 23-26, 29, 30, 32-34, 41 and 48-51 depend are allowable, making claims 11, 18, 23-26, 29, 30, 32-34, 41 and 48-51 allowable in their present form.

Amendments to the Specification

Inadvertent typographical errors on page 8 line 4 and page 18 line 6 have been corrected. No new matter has been added.

In view of the above amendments and remarks it is respectfully submitted that independent claims 1, 35, 36, 38-40, 42-44, 46, 47, 52-54 and 59, and hence dependent claims 2, 3, 5-34, 37, 41, 45, 48-51 and 55-58 are in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



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